

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of

Expanding Flexible Use of the)	GN Docket No. 18-122
3.7 to 4.2 GHz Band)	

Comments of Cisco Systems, Inc.

Cisco Systems, Inc. files its comments in support of the cooperative and voluntary proposal to transition spectrum from satellite to terrestrial use that have been sparked by the Commission's proposal to consider opening 3.7 – 4.2 GHz to terrestrial advanced services. In particular, Cisco is encouraged by the efforts of the C-Band Alliance to voluntarily relinquish downlink spectrum currently in use in favor of more efficient downlink topologies. Voluntary spectrum transitions are much less susceptible to policy and legal friction that will slow the transition of the band compared to directed transitions. With willing participants already self-identified, the Commission should implement the voluntary plan, and place a premium on speed.

Cisco Systems, Inc. is a San Jose, California manufacturer of Internet products, solutions and services for service provider and enterprise customers that are sold around the world. Cisco's core networking technology for service providers has been engineered to support 5G technology. Based on our evaluation of growth and change in consumer demand, Cisco believes 5G systems are critical to support growing consumer demand, and will simultaneously increase the range of use cases that can be addressed by wireless technology. Our long-term study of

demand data, known as the Visual Networking Index (or VNI)¹ consistently shows that devices are continually advancing and consuming more bandwidth, networks are becoming more capable of supporting higher bandwidth consumption, video – which itself is evolving to deliver ever-high definition images – is consuming more bandwidth than any other application, and the sheer number of devices that will support the Internet of Things is exploding. Taken together, these trends are all combining to put significant upward pressure on demand growth. For these reasons, Cisco joined with like-minded companies to file comments on the Mid-Band Spectrum Notice of Inquiry in 2017² seeking to make more mid-band spectrum available for terrestrial broadband technologies.

The Commission is well aware of the need for a mix of spectrum bands to address 5G capabilities. The Chairman’s “5G Fast” Plan correctly notes the critical importance of mid-band spectrum to delivering the full 5G vision. Simply put, mid-band spectrum enables spectrum re-use with propagation characteristics that are very familiar and well known to network planners. In fact, mid-band spectrum is key to the densification of networks envisioned under the 5G standards.

Spectrum in the 3 GHz range is critically important for this purpose. In Europe, regulators have declared the 3.4-3.8 GHz band as the first band to address 5G needs. Other nations, well beyond Europe, have had mobile allocations in the 3 GHz range for some time and are well positioned to open the 3 GHz range to 5G technologies. Countries such as the US that are using the 3 GHz range in part for satellite downlink, however, face a dilemma. Satellite downlink and terrestrial broadband are not compatible. If the US is to make more spectrum

¹ https://www.cisco.com/c/dam/assets/sol/sp/vni/forecast_highlights_mobile/index.html

² Comments of the Mid-Band Spectrum Coalition, in GN 17-183, filed Oct. 2, 2017.

available in the 3.7-4.2 GHz band for terrestrial broadband, satellite uses must be moved. The C-Band Alliance proposal, therefore, to repack satellite downlink facilities, merge downlink operations into one portion of the band, and clear 200 MHz of spectrum for terrestrial broadband use, is an important contribution to our 5G future. A voluntary, negotiated band transition permits C-band operators to plan how their downlink operations can be adjusted to accommodate terrestrial spectrum use in part of the band. Importantly, it also permits C-band operators to manage their customer relationships as downlink facilities are changed.

But there is one feature of a voluntary transition that is head and shoulders more important than any other – speed. As this Commission is well aware, many administrations around the world would relish the opportunity to position 5G capabilities at the forefront of their national economies, seeking to capture the same economic benefits that the Commission did when it moved to open the US market to 4G technology, becoming the first country to do so. That 3G-to-4G transition allowed the US to be the locus of significant technology development at the network and device level, new intellectual property, and in addition spawned the now-enormous applications economy. 5G technology will be no less transformative, and probably more so. For that reason, the Commission is well advised to choose policy approaches that favor speedy deployment over other considerations. A voluntary negotiation, in which satellite interests mutually agree to accommodate 5G terrestrial broadband, is an opportunity that the Commission can and should grasp, and promptly.

Cisco therefore urges the Commission to take fast action to implement the C-Band Alliance proposal for a private band transition of 3.7-4.2 GHz. Satellite operators have every reason to ensure that the transition will leave their customers whole. Not only are these customers an important source of revenue, but satellite operators who leave their customers

dissatisfied face the risk of private litigation. More importantly, speedy action to make 200 megahertz of spectrum available in the mid-band for 5G is too important to delay. This spectrum can and should be put to work for American consumers roughly contemporaneously with Europe's 3 GHz spectrum. The Commission should act with dispatch.

Respectfully submitted,

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October 29, 2018